MEMORANDUM

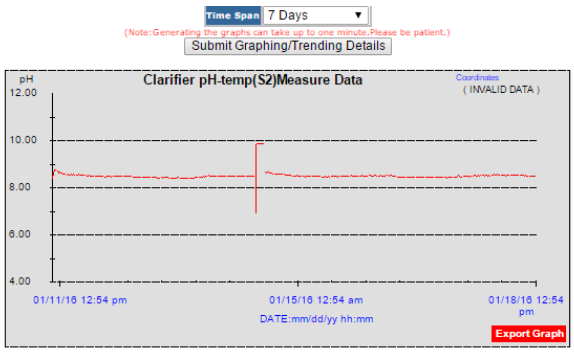
DATE:	January 18th, 2016
FROM:	Joe Harrington
SUBJECT:	January Weekly Progress Report @ Gold King
TO:	Steven Way

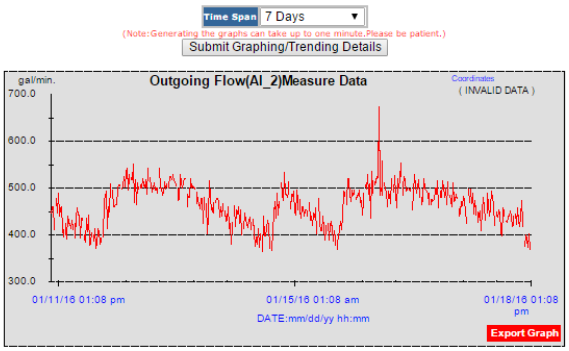
Project:	Gold King Interim Water Treatment Plant (IWTP)	**Reporting Period:**	January 11 – January 18
Location:	Gladstone, Colorado	**Report No.:**	5
Prepared for:	Emergency Response Unit – US EPA Region 8		

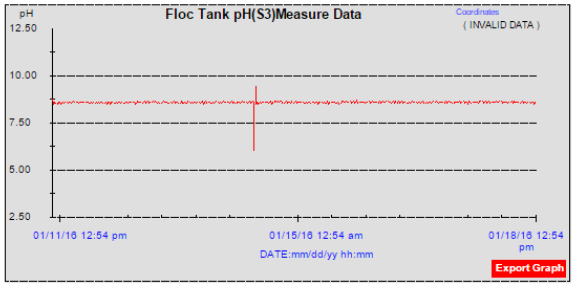
I. General Operations Summary:

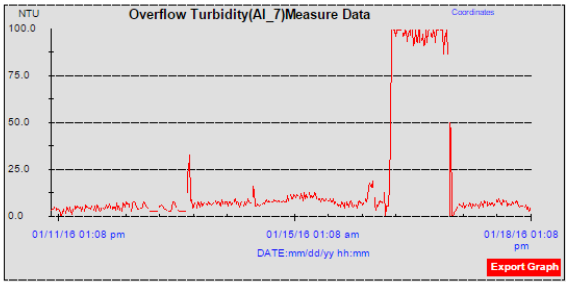
IWTS Function/Upsets

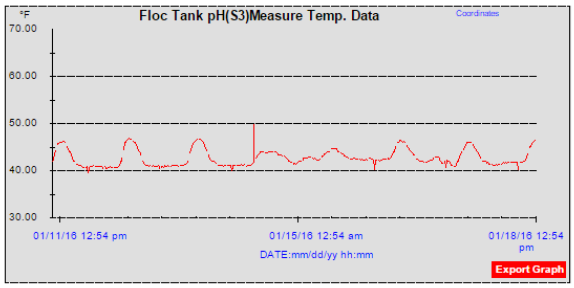
- The following graphs provide trending information collected by datalogging equipment during the previous 7 days. These dataloggers collect control information from the Lime Circuit (left) and Flow Circuit (right) Programmable Logic Controllers (PLCs) at the Gold King IWTP. Over the reporting period (1/11 – 1/18/16 inclusive) Alexco treated 4.96 million gallons at an average of 496 gpm, resulting in 36 gpm to the sludge storage system and 460 gpm to the discharge line.

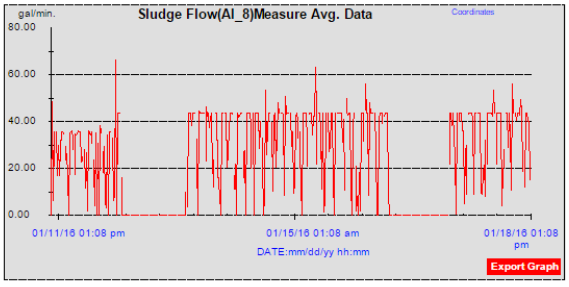












- Please note: Each day, the Alexco operators check the pH at both the floc tank and clarifier discharge. During this time, the probe is placed in vinegar (acid), and three pH buffers – 4, 7, and 10. While the probe is in the buffer, the datalogger may captured one of those points for tracking purposes, which explains the frequent periodic (daily) pH spikes seen on the graph.
- The flow meter that measures the discharge sludge flow rate from the clarifier became clogged and required cleaning. During this time, no flow was recorded to the sludge bags. It was taken out of service on 1/13/2016, cleaned, and returned to service.
- The airline from the Ingersoll-Rand air compressors froze at 11:00am on Saturday, 1/16/2016. During this time, the air release valve at the bottom of the clarifier was inoperable, resulting in high turbidity water (see spike in NTUs) at the discharge from the clarifier. The airline was replaced, heat-traced, and insulated at 9:00am Sunday, 1/17/2016 and the system returned to normal operation. The compressed air is now being dehydrated through an air dryer and the line is insulated and heat-traced, preventing this issue from re-occurring.

Communication System Function Status

- EPA(ER) has asked Century Link for a quote to provide internet service to the IWTP, but the status of that request is unknown.

Facility or System Related Work, including Repairs & Completions

- Precision Electric has connected the WTP to grid power. The following projects will be completed during the next few days, starting on 1/19/2016:
    - Hardwire 50hp electric blower to main panel, and conduct tests to verify lime can be pneumatically transferred from the horizontal silo to the vertical silo.
    - Connect all lighting throughout the building, above the clarifier, and outside of the building.
    - Replace 4th electric heater located within WTP.

II. Identified Problems, Causes, and Solutions (Planned or Implemented)

- Alexco has purchased a thickener tank to be installed downstream of the clarifier. Alexco is currently sending roughly 30 to 40 gpm of sludge at 1% solids from the clarifier to the bags. With this thickener, the discharge rate will be reduced to between 5 to 15 gpm with an increase in solids to 3% to 5% solids.
- Alexco is planning to install a pump, flow meter, and discharge line from the D cell (lowest cell) to the clarifier on 1/19/2016 – 1/20-2016. This “pumpback” system will reduce the discharge from the textile bags to the creek, and instead send sludge-water back to the clarifier for retreatment.
- Alexco is planning to install one or two additional textile bags in the A and B cells depending on access and snow cover. These new bags should demonstrate improved performance because of the improved quality of floc mixture and consistent dosing rate.

III. System Inspections – Specific elements inspected and finding

- The QA/QC box plot analysis of the testing results indicates that the probes deviate beyond acceptable threshold limits around 4 days without cleaning, therefore cleaning has been conducted 3x weekly and will continue at this frequency unless the box plot analysis indicates more frequent cleaning is necessary. Box plot analysis is conducted monthly and reviewed by the Project Director. The Project Director will determine if the replacement of the probes is necessary from inspection of the testing results and if the cleaning and calibration schedule is sufficient.

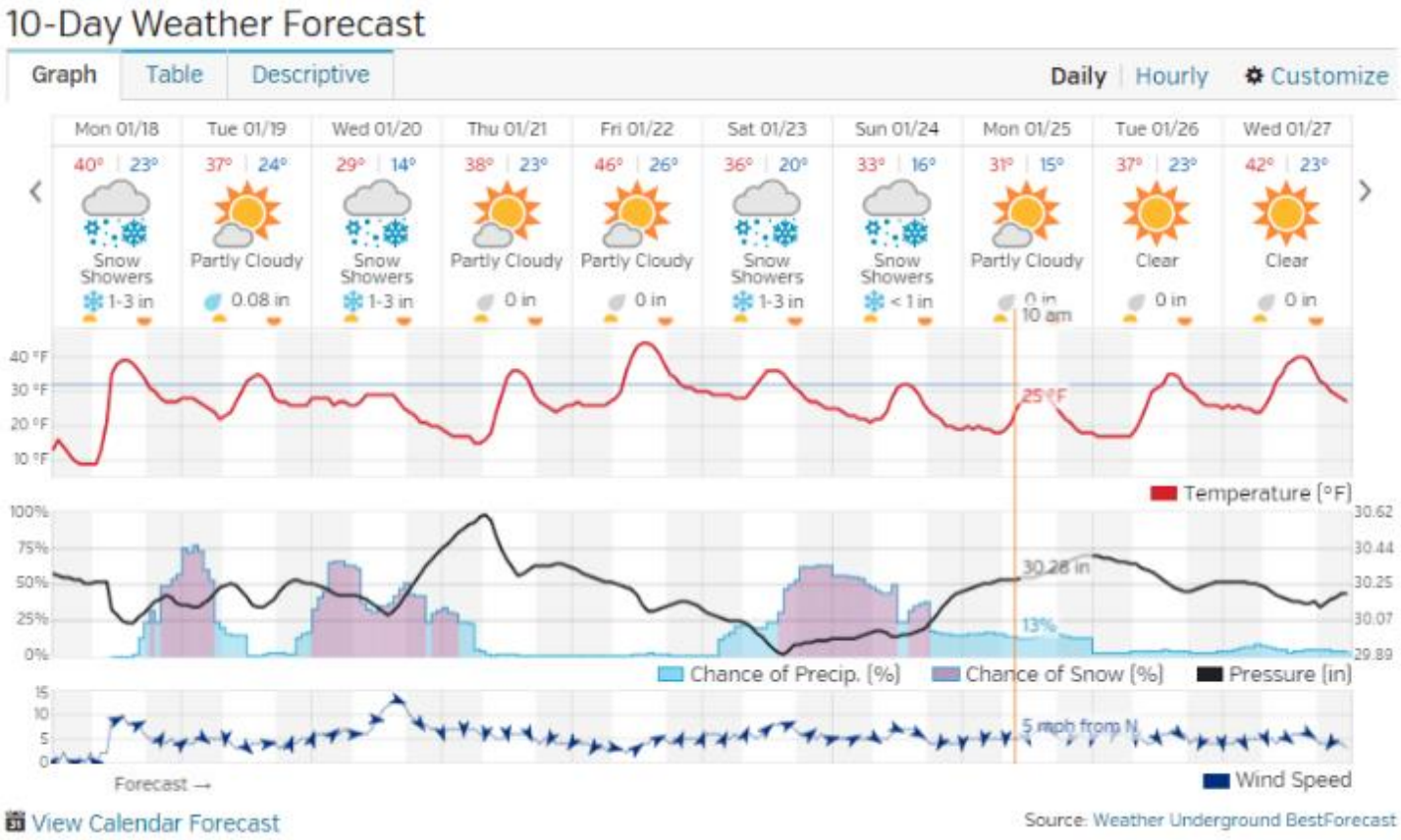
IV. Site Status

Personnel and equipment onsite

- Alexco currently employs two FTEs who live in Silverton that oversee operations at Gold King IWTP.

Weather conditions

- Weather Underground Report for Silverton, CO (1/11/2016 – 1/20/2016)



.